Amendments to the Claims:

Please amend claims 1, 11, 58, 59, and 68 as follows. The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system comprising:

a plurality of spatially resolved labels generating identifiable spectra in response to excitation energy, wherein at least some of the spectra comprise a plurality of signals for each label, the plurality of signals defining a plurality of wavelengths, the wavelengths from the spectra being intermingled;

a first family of the labels generating different identifiable spectra having first signals with a first wavelength, a first label of the first family including an associated second signal defining a second wavelength, a plurality of labels of the first family including associated second signals having wavelengths which are different than the second wavelength; and

a detector simultaneously imaging ~~at least some of~~ the spectra of the plurality of spatially resolved labels upon a surface for identification of the labels.

2. (Canceled)

3. (Previously Presented) The system of claim 1, wherein the labels comprise at least one semiconductor nanocrystal.

4. (Previously Presented) The system of claim 1, wherein each label comprises at least one population of semiconductor nanocrystals, each population generating a signal having a population wavelength in response to the excitation energy.

5. (Original) The system of claim 4, wherein at least some of the labels comprise a plurality of the populations supported by a matrix.

6. (Original) The system of claim 1, further comprising at least one probe body including a label and an associated assay indicator marker, the indicator markers generating indicator signals in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay.

7. (Original) The system of claim 1, wherein the simultaneously imaged labels are distributed across a two-dimensional sensing field.

8. (Original) The system of claim 7, wherein the detector comprises a diffractor and a sensor, and wherein each label is sufficiently smaller than the sensing field so that the spectra can be wavelength-dispersed by the diffractor without excessive overlap of the dispersed spectra upon the sensor.

9. (Previously Presented) The system of claim 7, wherein the detector comprises a light sensor and a diffractor, the diffractor disposed between the sensing field and the light sensor, the sensor simultaneously sensing the spectra from the plurality of labels.

10. (Previously Presented) The system of claim 9, wherein an open optical path extends from the sensing field to the diffractor and from the diffractor to the sensor, the sensor comprising an areal sensor and having the surface, the open optical path having an open cross-section with significant first and second open orthogonal dimensions.

11. (Currently Amended) The system of claim 10 **[[59]]**, wherein no slit aperture is disposed along the optical path to restrict the sensing field, and wherein the diffractor comprises an element selected from the group consisting of a prism, a dispersive reflective grating, and a dispersive transmission grating.

12. (Previously Presented) The system of claim 1, further comprising a spatial position indicator to identify label positions within a sensor field of the detector, wherein the detector senses relative spectral data.

13. (Original) The system of claim 12, further comprising a spectral analyzer coupled to the label position indicator and the detector, the analyzer deriving absolute wavelengths of the spectra in response to the relative spectral data and the identified label positions.

14. (Original) The system of claim 13, further comprising a first beam splitter disposed to optically couple the label position indicator with the sensing filed along a positioning optical path, and to optically couple the detector with the sensing field along a spectral optical path.

15. (Original) The system of claim 14, wherein the detector comprises an areal sensor and wherein the label position indicator comprises a processing module, the first beam splitter directing a first energy from the sensing field, past a diffractor and toward the areal sensor for generating spectral data, the first beam splitter directing a second energy from the sensing field to a position indicator for generation of position data.

16. (Original) The system of claim 13, further comprising a second beam splitter disposed along an optical path from the sensing field, wherein a first dispersion member is disposed in the spectral optical path so as to disperse wavelengths of the spectra along a first axis, and wherein a second dispersion member is optically coupled to the second beam splitter so as to disperse wavelengths of the spectra along a second axis, the first axis at an angle to the second axis relative to the sensing field for resolving spectral ambiguities of overlapping wavelengths along the first axis.

17. (Previously Presented) The system of claim 1 wherein the detector comprises means for distributing the signals across a sensor in response to wavelengths of the signals and positions of the labels in a sensor field, the distributing means disposed between the sensing field and the sensor.

18. (Original) The system of claim 17, further comprising means for determining positions of the labels within the sensing field, and a spectral analyzer coupled to the positioning means and the sensor, the analyzer determining the spectra.

19. (Original) The system of claim 18, wherein the positioning means comprises either an areal sensor and a beam splitter, or a calibration reference signal within the at least some spectra.

20. - 57. (Canceled)

58. (Currently Amended) A system comprising:

a plurality of spatially resolved labels generating identifiable spectra in response to excitation energy, wherein at least some of the spectra comprise a plurality of signals for each label, a first family of the labels generating different identifiable spectra having first signals with a first wavelength, a first label of the first family including an associated second signal defining a second wavelength, a plurality of labels of the first family including associated second signals having wavelengths which are different than the second wavelength;

a detector simultaneously imaging the spectra of the plurality of spatially resolved labels upon a surface of a sensor, the detector comprising a dispersion member dispersing wavelengths of the spectra across the surface of the sensor; and

a spatial position indicator to identify label positions within a sensor field of the detector.

59. (Currently Amended) A system comprising:

a plurality of spatially resolved labels generating identifiable spectra in response to excitation energy, at least some of the spectra having a plurality of wavelengths, at least some of the labels being distributed in two dimensions across a two-dimensional sensing field;

a detector comprising a light sensor having a two-dimensional light sensor surface, an open optical path, and a diffractor, the optical path of the detector optically coupling the sensor surface to the sensing field, the optical path sufficiently open in two orthogonal cross-

sectional dimensions that spectra from the ~~at least some~~ plurality of spatially resolved labels in the sensing field are simultaneously imaged upon the surface of the sensor with the simultaneously imaged spectra distributed in two dimensions across the sensor surface, the diffractor disposed along the optical path between the sensing field and the light sensor; and

an analyzer coupled to the detector, the analyzer identifying the labels in response to the simultaneously sensed spectra.

60. (Previously Presented) The system of claim 58, wherein the labels comprise at least one semiconductor nanocrystal.

61. (Previously Presented) The system of claim 58, wherein each label comprises at least one population of semiconductor nanocrystals, each population generating a signal having a population wavelength in response to the excitation energy.

62. (Previously Presented) The system of claim 61, wherein at least some of the labels comprise a plurality of the populations supported by a matrix.

63. (Previously Presented) The system of claim 58, further comprising at least one probe body including a label and an associated assay indicator marker, the indicator markers generating indicator signals in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay.

64. (Previously Presented) The system of claim 58, wherein the simultaneously imaged labels are distributed across a two-dimensional sensing field.

65. (Previously Presented) The system of claim 64, wherein the detector comprises a diffractor and a sensor, and wherein each label is sufficiently smaller than the sensing field so that the spectra can be wavelength-dispersed by the diffractor without excessive overlap of the dispersed spectra upon the sensor.

66. (Previously Presented) The system of claim 64, wherein the detector comprises a light sensor and a diffractor, the diffractor disposed between the sensing field and the light sensor, the sensor simultaneously sensing the spectra from the plurality of labels.

67. (Previously Presented) The system of claim 66, wherein an open optical path extends from the sensing field to the diffractor and from the diffractor to the sensor, the sensor comprising an areal sensor and having the surface, the open optical path having an open cross-section with significant first and second open orthogonal dimensions.

68. (Currently Amended) The system of claim 59, wherein a **[[no]]** slit aperture is not disposed along the optical path to restrict the sensing field, and wherein the diffractor comprises an element selected from the group consisting of a prism, a dispersive reflective grating, and a dispersive transmission grating.

69. (Previously Presented) The system of claim 58, further comprising a spectral analyzer coupled to the label position indicator and the detector, the analyzer deriving absolute wavelengths of the spectra in response to the relative spectral data and the identified label positions.

70. (Previously Presented) The system of claim 69, further comprising a first beam splitter disposed to optically couple the label position indicator with the sensing filed along a positioning optical path, and to optically couple the detector with the sensing field along a spectral optical path.

71. (Previously Presented) The system of claim 70, wherein the detector comprises an areal sensor and wherein the label position indicator comprises a processing module, the first beam splitter directing a first energy from the sensing field, past a diffractor and toward the areal sensor for generating spectral data, the first beam splitter directing a second energy from the sensing field to a position indicator for generation of position data.

72. (Previously Presented) The system of claim 70, further comprising a second beam splitter disposed along an optical path from the sensing field, wherein a first dispersion member is disposed in the spectral optical path so as to disperse wavelengths of the spectra along a first axis, and wherein a second dispersion member is optically coupled to the second beam splitter so as to disperse wavelengths of the spectra along a second axis, the first axis at an angle to the second axis relative to the sensing field for resolving spectral ambiguities of overlapping wavelengths along the first axis.

73. (Previously Presented) The system of claim 58 wherein the detector comprises means for distributing the signals across a sensor in response to wavelengths of the signals and positions of the labels in a sensor field, the distributing means disposed between the sensing field and the sensor.

74. (Previously Presented) The system of claim 73, further comprising means for determining positions of the labels within the sensing field, and a spectral analyzer coupled to the positioning means and the sensor, the analyzer determining the spectra.

75. (Previously Presented) The system of claim 74, wherein the positioning means comprises either an areal sensor and a beam splitter, or a calibration reference signal within the at least some spectra.